

Remarks

Review and reconsideration of this application are respectfully requested.

In the Official Action mailed April 1, 2003, claims 22-25, 30 and 32-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feit et al '528 in view of Johnson et al '071 and any one of EP 432,911, Coran et al '535 or Novak et '143, optionally further in view of Dyneon Fluorothermoplastics product information and Viton Fluoroelastomer Technical Information.

The Examiner alleges that it was known from Feit et al to form a hose with an inner rubber layer formed via extrusion of an acrylonitrile-butadiene rubber and to extrude a barrier layer which includes a terpolymer derived from tetrafluoroethylene, hexafluoropropylene and vinylidene.

Johnson et al is cited as suggesting that those skilled in the art at the time the invention was made would have blended a thermoplastic fluoropolymer with an elastomeric fluoropolymer in order to provide a composition which was not as brittle as the thermoplastic fluoropolymer alone. According to the Examiner, Johnson et al suggests the use of the same claimed elastomer for the fluoropolymeric elastomer material to be blended with a thermoplastic fluoropolymer which was described as a terpolymer. It is alleged that the use of such a blend in the hose construction would have been obvious to those of ordinary skill in the art at the time the invention was made in order to provide the barrier layer of Feit with a less brittle construction (a hose being desirably elastomeric). In order to further evidence that those skilled in the art at the time the invention was made would have incorporated a blend of a thermoplastic polymer and an elastomeric polymer as a layer in a hose, the Examiner has cited EP 432,911; Coran et al or Novak et al (all newly cited).

Applicant believes that the Examiner has gathered a very broad and vague assortment of

references in an attempt to construct a reasonable version of the barrier layer of the present invention.

Feit et al. teach a hose which comprises an inner core of acrylonitrile-butadiene rubber, a barrier layer of a terpolymer derived from tetrafluoroethylene, hexafluoropropylene and vinylidene fluoride wherein the barrier layer is adhered directly to the acrylonitrile-butadiene rubber, and a cover layer. There is no teaching or suggestion by Feit et al that the barrier layer should be a blend of hexafluoropropylene-tetrafluoroethylene-vinylidene fluoride terpolymers much less the specific blend of the present invention wherein the barrier layer includes about 20 to 80 weight percent of a first hexafluoropropylene-tetrafluoroethylene-vinylidene fluoride terpolymer containing about 67 to 73 weight percent fluorine and having elastomeric characteristics, and about 80 to 20 weight percent of a second hexafluoropropylene-tetrafluoroethylene-vinylidene fluoride terpolymer containing about 70 to 75 weight percent fluorine and having thermoplastic characteristics.

Johnson et al teach a blend of (1) an elastomeric copolymer or terpolymer containing one or more of the monomer units: vinylidene fluoride, hexafluoropropylene, tetrafluoroethylene, chlorotrifluoroethylene, ethylene, propylene, perfluoroethoxyethylene and 1-hydroxypentafluoropropylene, and (2) a thermoplastic vinylidene fluoride/hexafluoropropylene copolymer. Accordingly, the thermoplastic component of Johnson et al. is a copolymer rather than a terpolymer as claimed in the present invention. While the thermoplastic copolymer (2) of Johnson et al. may contain other monomer units such as fluoropropylene and perfluoroethoxyethylene, such other monomer units are neither required nor desired, but are optional and then only in minor amounts. Applicants believe that it would be unreasonable for the Examiner to speculate what monomers Johnson et al had in mind other than those monomers disclosed. It is noteworthy that Johnson et al. do disclose the use of tetrafluoroethylene as a potential monomeric unit for their elastomeric copolymer or terpolymer but not as a potential monomeric unit for their thermoplastic copolymer. If Johnson et al had intended to include tetrafluoroethylene as a monomer in their thermoplastic copolymer, they

would have included it. Accordingly, one can reasonably conclude that Johnson et al. did not consider tetrafluoroethylene to be a suitable monomer unit to be added to the thermoplastic copolymer even in minor amounts. Therefore, since Johnson et al. fail to disclose or suggest the blending of an elastomeric copolymer or terpolymer formed by the copolymerization of two or more monomers selected from the group consisting of hexafluoropropylene, vinylidene fluoride and tetrafluoroethylene with a thermoplastic terpolymer formed by the copolymerization of hexafluoropropylene, vinylidene fluoride and tetrafluoroethylene, applicants contend that there is no direct link between Johnson et al. and Feit et al.

Novak et al. disclose polymer blend compositions having a continuous non-fluorine-containing thermoplastic polymer and a dispersed phase of a fluorinated elastomer.

Coran et al. teach thermoplastic elastomeric compositions containing about 25 to 85 parts by weight of crystalline thermoplastic polyolefin and about 75 to 15 part by weight of rubber.

EP 432,911 discloses a blend of 50 to about 90% of fluorinated elastomer and 10 to about 50% of an essentially fluorine-free thermoplastic.

The Dyneon reference is simply a technical information paper concerning their line of fluorothermoplastics.

The Viton reference is simply a technical information paper concerning their line of fluoroelastomers.

It is obvious that none of the above references to Novak et al., Coran et al., EP 432,911, Dyneon and Viton teach or even suggest a blend of a fluorothermoplastic and a fluoroelastomer. Furthermore, it is believed that neither of the references to Feit et al. and Johnson et al. teach the specific blend of the present invention, nor is it believed that one skilled in the art would be led to the present invention by the teachings of any of these references either alone or in

combination with one or more of the other references. Accordingly, applicant respectfully requests that the rejection be withdrawn.

Applicant contends that the present invention is concerned with various embodiments of a method of producing a flexible polymeric hose having improved fuel vapor barrier properties. The method comprises the forming of various layer of the tubular structure of the hose wherein one of the tubular structures is a specific blend of about 20 to 80 weight percent of a first hexafluoropropylene-tetrafluoroethylene-vinylidene fluoride terpolymer having a fluorine content of about 65 to 73 weight percent fluorine and a second hexafluoropropylene-tetrafluoroethylene-vinylidene fluoride terpolymer having a fluorine content of about 70 to 75 weight percent fluorine. The first terpolymer exhibits an elastomeric characteristic and the second terpolymer exhibits a thermoplastic characteristic. In accordance with the invention, the method of producing the flexible hose is relatively inexpensive to operate which provides for the manufacture of a cost-effective hose capable of meeting the strict fuel permeation standards of the automotive industry. Accordingly, it is respectfully requested that this rejection be withdrawn.

Claims 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above further taken with applicant's admitted prior art.

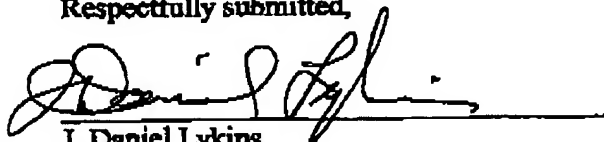
Applicant submits that dependent claims 25-29 are directed to a preferred aspect of the invention and are intended to further limit the claims from which they depend. It is believed that the claims from which claims 25-29 depend will be deemed allowable; therefore, such dependent will also be deemed allowable.

The Examiner's attention is directed to the fact that the present application is a divisional application of U.S. Serial No. 09/754,674, filed January 4, 2001, which is a divisional application of 09/083,294, filed May 22, 1998. Both prior applications have be found allowable and have now issued as U.S. Patent No. 6,365,250 and U.S. Patent No. 6,203,873, respectively.

In summary, applicant respectfully submits that there is no teaching in any of the references, either alone or in combination, to a method for employing a barrier layer comprising a blend of about 20 to 80 weight percent of a first hexafluoropropylene-tetrafluoroethylene-vinylidene fluoride terpolymer having a fluorine content of about 65 to 73 weight percent fluorine and having elastomeric characteristics, with about 80 to 20 weight percent of a second hexafluoropropylene-tetrafluoroethylene-vinylidene fluoride terpolymer having a fluorine content of about 70 to 75 weight percent fluorine and having thermoplastic characteristics; nor is there any suggestion to do so. It is well established that teachings or references may be combined only if there is some incentive to do so, see *re Fine*, 5 USPQ 2d at 1600. Also, in *Micro Chemical, Inc. v. Great Plains Chemical Co.*, 41 USPQ2D 1238, 1244 (Fed. Cir. 1997), it is stated "A determination of obviousness must involve more than indiscriminately combining prior art; a motivation or suggestion to combine must exist." Furthermore, the teaching or suggestion must be found in the prior art, not in the applicant's disclosure, *in re Vaack*, 947 F. 2d 488, 20 USPQ 2d 1438 (Fed. Cir. 1991).

In view of the foregoing amendments and discussion, it is believed that this application is now in condition for allowance and an early indication thereof is earnestly solicited.

Respectfully submitted,


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